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| 10/679,938 | 10/06/2003 | Benjamin Ari Tober | 111244.150 (US2) | 3607 |
| 23483 7590 01/18/2007 WILMER CUTLER PICKERING HALE AND DORR LLP 60 STATE STREET BOSTON, MA 02109 | | | EXAMINER HOANG, HIEU T | |
| | | | ART UNIT 2152 | PAPER NUMBER |
| SHORTENED STATUTORY PERIOD OF RESPONSE | | NOTIFICATION DATE | DELIVERY MODE | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 01/18/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/679,938

Applicant(s)

TOBER ET AL.

Examiner

Hieu T. Hoang

Art Unit

2196

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f):
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 01-26-2005.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C.

121:

- I. Claims 1-12, drawn to network-computer interface, classified in class 709, subclass 250.
- II. Claims 13-20, drawn to distributed data processing, classified in class 709, subclass 201.

2. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, invention I has separate utility such as data routing in virtual private network, lacking one or more of the particulars of the inventions II. See MPEP § 806.05(d).

The examiner has required restriction between subcombinations usable together. Where applicant elects a subcombination and claims thereto are subsequently found allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is

anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

During a telephone conversation with Ben Brown on 01-02-2007, a provisional election was made without traverse to prosecute the invention of group I, including claims 1-12. Affirmation of this election must be made by applicant in replying to this Office action.

3. Claims 13-20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.
4. Claims 1-12 are presented for examination.

Claim Objections

5. Claim 2 recites the limitation "the same networking address" on line 5.

There is insufficient antecedent basis for this limitation in the claim.

For examining purpose, " the same networking address " on line 5 will be interpreted as "the same networking address of the network device".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Lim et al. (Customizable Virtual Private network Service with QoS, August 1, 2000, <http://www.cs.cmu.edu/afs/cs/project/cmcl/archive/Darwin-papers/cn-vpn01.pdf>, hereafter Lim).

8. For claim 1, Lim discloses a method for use in managing resources in networking (abstract), the method comprising:

- adding a field to an operating system kernel software procedure, the field referencing a virtual router context (page 13, left column, lines 11-18, vpn_id is read as a virtual router context; figure 10, kernel space); and
- modifying packet processing software code to cause the packet processing software code to execute in accordance with the virtual router context (page 13, left column, lines 20-25, figure 10, kernel space).

9. Claims 2-9 and 11-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Alfieri et al. (US 2002/009849, hereafter Alfieri).

10. For claim 2, Alfieri discloses a method for using a network device having an operating system instance that operates in a plurality of routing contexts (abstract, [0036] lines 4-8, a virtual router packet switching system is read as the claimed network device), the method comprising:

- associating a first network with a first routing context and a second network with a second routing context, wherein the first context is isolated from the second context ([0034] lines 1-4, [0036] lines 1-6, each virtual private routed network VPRN is associated with a different virtual router VR, and each VR has a distinct routing context area CTXT);

- receiving, at the same networking address of the network device ([0025] lines 1-6, overlapping addresses can be used for different virtual access router VARs), a first message originating from the first network and a second message originating from the second network by the network device ([0036] lines 8-15);
- associating the first message with a first application running on the operating system instance of the network device based on a determination that the first message is associated with the first routing context ([0037] lines 1-18 and [0038] lines 1-10); and
- associating the second message with a second application running on the operating system instance based on a determination that the second message is associated with the second routing context ([0037] lines 1-18 and [0038] lines 1-10).

11. For claim 3, Alfieri further discloses at least one of Transport Control Protocol (TCP), User Datagram Protocol (UDP), and raw IP code ([0020] lines 5-10) associated with the operating system instance is modified to cause the code to execute in accordance with a particular routing context ([0036] lines 10-20).

12. For claim 4, Alfieri further discloses:

- assigning to the first message a first routing context number, wherein the first message is determined to be associated with the first routing context using the first routing context number ([0037] lines 1-5, routing context

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number 134 is assigned to any message from VR#134, messages from VR #134 is then associated with routing context number 134); and

- assigning to the second message a second routing context number, wherein the second message is determined to be associated with the second routing context using the second routing context number ([0037] lines 1-5, figure 5, there can M message context numbers wherein $M > 1$).

13. For claim 5, Alfieri further discloses:

- assigning a first routing table to the first router context, wherein the first routing table is associated with the first context number ([0037] lines 1-5, routing table 134 is assigned to router context 134); and
- assigning a second routing table to the second router context, wherein the second routing table is associated with the second context number ([0037] lines 1-5, figure 5, there can M message context numbers wherein $M > 1$).

14. For claim 6, Alfieri further discloses the first and second networks are private networks that are isolated from the Internet (figure 1, VPRNs are virtual private networks and are isolated from the Internet).

15. For claim 7, Alfieri further discloses information received by the network device from the first network is not provided to the second network by the network device, and wherein information received by the network device from the second network is not provided to the first network by the network device ([0036]

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lines 13-20, the task executes using the data from the context area CTXT associated with the VR which sent out the task).

16. For claim 8, Alfieri further discloses both the first message and the second message include at least one data packet ([0036] lines 12-13).

17. For claim 9, Alfieri further discloses the first and second messages are received by the network device using a first network connection initiated by a first process and a second network connection initiated by a second process, respectively ([0036] lines 8-20, [0037] lines 12-16), the method further comprising:

- assigning to the first process a default first routing context number ([0036] lines 13-16); and
- assigning to the second process a default second routing context number ([0036] lines 13-16, each process is coupled with the appropriate context area).

18. For claim 11, Alfieri further discloses associating at least one interface to the operating system instance with a routing context ([0038] lines 6-10, figure 4, interfaces PI's and VI's, [0033] lines 1-17, [0041] lines 1-7).

19. For claim 12, Alfieri discloses a computer system comprising:

- a first network that is associated with a first routing context ([0034] lines 1-4, [0036] lines 1-6, each virtual private routed network VPRN is associated with a different virtual router VR, and each VR has a distinct routing context area CTXT);
- a second network that is associated with a second routing context ([0034] lines 1-4, [0036] lines 1-6);
- a network device that receives messages from both the first network and second network at a single networking address (abstract, [0036] lines 4-8, a virtual router packet switching system is read as the claimed network device; [0025] lines 1-6, overlapping addresses can be used for different virtual access router VARs); wherein the network device is configured to determine that messages received from the first network are associated with the first routing context and to determine that messages received from the second network are associated with the second routing context ([0037] lines 1-18 and [0038] lines 1-10).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Alfieri in view of Casey et al. (US 6,205,488, hereafter Casey).

21. For claim 10, Alfieri does not disclose inheriting the default first routing context by a third process, whose parent is the first process, at the time of creation of the third process.

However, in the same field of virtual private network, Casey discloses inheriting the default first routing context by a third process, whose parent is the first process, at the time of creation of the third process (column 2 lines 26-49).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to combine the teachings of Alfieri and Casey in order to allow for communicating private traffic through a shared network that employs MPLS while providing sufficient performance to each network (Casey, column 1 lines 43-52)

Conclusion

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Leach et al. US 6,108,715. Method and system for invoking remote procedure calls.
- Owens. US 5,142,622. System for interconnecting application across different networks of data processing systems by mapping protocols across different network domains.

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- Tahan. US 2002/0078370. Controlled information flow between communities via a firewall.
- Jayasenan et al. Stateful network address translation protocol.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hieu T. Hoang whose telephone number is 571-270-1253. The examiner can normally be reached on Monday-Thursday, 8 a.m.-5 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nabil El-Hady can be reached on 571-272-3963. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

H/H


NABIL M. EL-HADY
SUPERVISORY PATENT EXAMINER